Franco TimbolEPRS 8530 Quantitative 1 – Project 2 July 18, 2011

Description/Introduction

Scheduling decisions vary from school system to school system and within school systems themselves. For example, block scheduling creates semester long courses rather than year-long courses. Recently, a school system changed from block scheduling to an A/B block schedule that creates year-long courses. This study is concerned with the possible effects that this switch from block semester long United States History courses to an A/B block year-long course will have on stated mandated End of Course Tests (EOCTs). This study compares student performance on the End of Course Test between two groups of students: one group that took an EOCT in the Spring of 2010 after a semester long course in United States History and a second group of students who took an EOCT in the Spring of 2011 after a year- long course in United States History. The same instructor taught both courses to both groups of students in both school years. An analysis of the EOCT scores for both groups of students reveals that mean scores were higher for students in the year-long course rather than in the semester long course. This evidence of increased performance of students in the year-long course is the focus of this study. Using statistical analysis, a determination will be made as to how significant this increase in performance of the A/B block students is compared to the one semester students. If this increased performance is significant, further study may be warranted and may guide policy makers such as principals and school boards in determining scheduling matters for local school systems.

Methods

Students in both classes had the same amount of seat time in the classroom. Both students experienced similar instructional materials, instructional methods, and assessments. During the one semester course, students met every day for ninety minute blocks of time. During the year-long course, students met every other day for ninety minute blocks of time and one day for forty minutes. A convenience sample of twenty nine students was chosen from three United States History courses from 2010. Students from all three courses were placed in alphabetical order and every third student’s EOCT score was chosen for this study. Another convenience sample of thirty students from three United States History courses was chosen from 2011. Again, students were placed in alphabetical order and every third student’s EOCT score was chosen for this study.

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| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Descriptives** | | | | | | | | |
| VAR00001 | | | | | | | | |
|  | N | Mean | Std. Deviation | Std. Error | 95% Confidence Interval for Mean | | Minimum | Maximum |
| Lower Bound | Upper Bound |
| 1.00 | 29 | 72.0000 | 11.78073 | 2.18763 | 67.5188 | 76.4812 | 50.00 | 92.00 |
| 2.00 | 29 | 75.2414 | 10.19683 | 1.89350 | 71.3627 | 79.1200 | 54.00 | 92.00 |
| Total | 58 | 73.6207 | 11.04191 | 1.44987 | 70.7174 | 76.5240 | 50.00 | 92.00 |

Since these two groups of students do not have any relation to each other, a two-tailed independent T-test was used withα = 0.05. The results are provided below.

Results

Table 1 presents the means and standard deviations by group.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | VAR00003 | N | Mean | Std. Deviation |
| VAR00001 | 1.00 | 29 | 72.0000 | 11.78073 |
| 2.00 | 29 | 75.2414 | 10.19683 |

The results show that the A/B 2011 group mean of 75.24 was 3.24 points higher than the 1Sem2010 group mean of 72. . The standard deviations for both groups are within 1.58 of each other. The 1Sem 2010 group contains greater variability in deviations than the AB 2011 group. Since these scores were not randomly selected, this variability may be the result of chance.

Table 2 presents results of Independent T-Test and Confidence Intervals.

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | | Levene's Test for Equality of Variances | | t-test for Equality of Means | | | | | | |
| F | Sig. | t | df | Sig. (2-tailed) | Mean Difference | Std. Error Difference | 95% Confidence Interval of the Difference | |
| Lower | Upper |
| VAR00001 | Equal variances assumed | .372 | .545 | -1.120 | 56 | .267 | -3.24138 | 2.89328 | -9.03732 | 2.55456 |
| Equal variances not assumed |  |  | -1.120 | 54.872 | .267 | -3.24138 | 2.89328 | -9.03995 | 2.55719 |

The AB 2011 mean is 75.24 is near the upper limit of the 95% confidence interval. The Ho = 72 is rejected. The alternative hypothesis H1 ≠ 72 is accepted but there is no significant difference according to the confidence interval. Since the AB2011 Mean was close to being statistically significant further research would be warranted to determine if a change in scheduling of similar courses from a one semester block to a year-long A/B block would lead to increased performance on the EOCT.